

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [66 FR 23840 5/10/2001]

[Docket No. 99-NM-164-AD; Amendment 39-12225; AD 2001-09-18]

RIN 2120-AA64

Airworthiness Directives; McDonnell Douglas Model DC-9-80 Series Airplanes and Model MD-88 Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to certain McDonnell Douglas Model DC-9-80 series airplanes and Model MD-88 airplanes, that currently requires a one-time inspection to detect cracking of the main landing gear (MLG) pistons, and repair or replacement of the pistons with new or serviceable parts, if necessary. This amendment requires, among other actions, repetitive dye penetrant and magnetic particle inspections to detect cracks of the MLG pistons; repair and replacement of discrepant parts; and installation of a preventative modification; as applicable. This amendment also provides for an optional terminating action for certain MLG pistons. This amendment is prompted by additional reports of failure of the MLG pistons during towing of the airplanes. The actions specified by this AD are intended to prevent fatigue cracking of the MLG pistons, which could result in failure of the pistons and subsequent damage to the airplane structure or injury to airplane occupants.

DATES: Effective June 14, 2001.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 14, 2001.

ADDRESSES: The service information referenced in this AD may be obtained from Boeing Commercial Aircraft Group, Long Beach Division, 3855 Lakewood Boulevard, Long Beach, California 90846, Attention: Data and Service Management, Dept. C1-L5A (D800-0024). This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Brent Bandle, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712; telephone (310) 627-5237; fax (310) 627-5210.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 96-19-09, amendment 39-9756 (61 FR 48617, September 16, 1996), which is applicable to certain McDonnell Douglas Model DC-9-80 series airplanes and Model MD-88 airplanes series airplanes, was published in the **Federal Register** on October 4, 2000 (65 FR 59146). The action proposed to require, among other actions, repetitive dye penetrant and magnetic particle inspections to detect cracks of the main landing gear (MLG) pistons; repair and replacement of discrepant parts; and installation of a preventative modification; as applicable. The action also proposed an optional terminating action for certain MLG pistons.

Comments Received

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

Request to Revise Note 1 of the Proposed AD

One commenter request that the following sentence be added to Note 1 of the proposed AD: “Modification per previous revisions of the referenced service bulletin or dispositions from the manufacturer that occurred prior to the effective date of the AD comply with the AD.”

The FAA partially agrees. We do not agree to include the sentence suggested by the commenter. However, as discussed below, we have included new notes in the final rule to give operators credit for accomplishing the preventative modification before the effective date of this AD.

Request to Give Credit for Preventative Modifications Accomplished Previously

One commenter requests that operators be given credit for accomplishing the preventative modification per the original version, or Revisions 01 through 03 of McDonnell Douglas Service Bulletin MD80-32-277, or procedures developed and analyzed by Boeing and approved by the FAA before the effective date of the AD. The commenter notes that Revision 04 of Service Bulletin MD80-32-277 (referenced as the appropriate source of service information for the requirements of this AD) contains procedures for wet grinding and flap shot peening, which were not recommended in the previous revisions of the service bulletin.

Two other commenters request that the applicability of paragraph (e)(2)(i) of the proposed AD include any MLG piston modified before the effective date of the AD per the original version, or Revisions 01 through 03 of McDonnell Douglas Service Bulletin MD80-32-277, or Service Rework Drawing SR08320081.

One of the commenters notes that one of the paragraphs in the Discussion section of the proposed AD states “Operators should note that, although the service bulletin specifies that the manufacturer may be contacted for disposition of certain repair conditions, this proposal would require the repair of those conditions to be accomplished per a method approved by the FAA. The commenter requests that it be revised to “...certain repair conditions, for all repairs performed after the effective date of this AD, this proposed AD....”

The FAA partially agrees. We find that modification of any MLG piston or replacement with a modified MLG per the original version, and Revisions 1 through 4 of the referenced service bulletin, Service Rework Drawing SR08320081, or any FAA-approved preventative modification to MLG pistons, before the effective date of this AD, is considered acceptable for compliance with the preventative modification requirements of paragraphs (a)(3), (b)(1)(iii), (b)(2), and (c)(1) of this AD, and with the replacement requirements of paragraphs (c)(2) and (d)(1) of this AD. Therefore, we have included new notes in the final rule to clarify this point. With the inclusion of these new notes, we find that the applicability of paragraph (e)(2)(i) of the final rule does not need to be changed. We also find that a revision to the Discussion section, as suggested by the commenter, is not necessary because that section does not reappear in the final rule.

Request to Include Reidentified Part Number

Two commenters request that paragraph (e) of the proposed AD also reference the part number (P/N) for MLG pistons that were modified and reidentified as P/N SR09320081-3 through SR09320081-13 inclusive, depending on its corresponding original identity. One of the commenters states that it tracks the MLG pistons by the applicable “SR” part number, which are listed in McDonnell Douglas Service Bulletin MD80-32-277, Revisions 01 through 04.

The FAA agrees that the affected MLG piston, P/N 5935347-1 through 5935347-509 inclusive, identified in paragraph (e) of the AD, have been modified and reidentified as P/N SR09320081-3 through SR09320081-13 inclusive. We have revised paragraph (e) of the final rule to clarify this point.

Request For Clarification of Applicability of Paragraph (e)(2)(ii) of the Proposed AD

The applicability of paragraph (e)(2)(ii) of the proposed AD reads “For any MLG piston that has been modified prior to the effective date of this AD.” One commenter interprets this to mean pistons modified prior to December 7, 1999 (the issuance date of Revision 04 of McDonnell Douglas Service

Bulletin MD80-32-277). The commenter states that it is reasonable to assume that some pistons may have been modified by Revision 04 of the referenced service bulletin since its issuance in December 1999.

From this comment, the FAA infers that the commenter is requesting that the applicability of paragraph (e)(2)(ii) of the proposed AD be clarified. We agree that clarification is necessary. The commenter is incorrect in its interpretation that the applicability of paragraph (e)(2)(ii) of the AD refers to MLG pistons modified per Revision 04 of McDonnell Douglas Service Bulletin MD80-32-277 prior to December 7, 1999. Our intent was that paragraph (e)(2)(ii) of the AD be applicable to “For any MLG piston that has been modified per service information other than Revision 04 of McDonnell Douglas Service Bulletin MD80-32-277 and not inspected per Revision 04 of the service bulletin prior to the effective date of this AD.” We have revised paragraph (e)(2)(ii) of the final rule accordingly to clarify this point.

Requests To Give Credit for Repetitive Inspections Since Modification

Several commenters request that the FAA give credit to operators that are doing repetitive inspections every 2,500 landings since modification of the MLG pistons per McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999, for the initial inspections required by paragraph (e)(2)(ii) of the proposed AD and the repetitive inspections required by paragraph (f) of the proposed AD. Two commenters also state that paragraph (h)(2) of the proposed AD has a similar requirement and request that paragraph (h)(2) of the proposed AD also be revised.

Another commenter states that, based on its service history, any MLG piston that has been inspected every 2,500 landings provides an equivalent level of safety. The commenter has no objection to the proposed initial compliance time of within 1,500 landings or 12 months after the effective date of this AD for MLG pistons that have not been inspected.

The FAA does not consider that a change, as requested by the commenters, to the final rule is necessary. Operators are given credit for work previously performed by means of the phrase in the “Compliance” section of the AD that states, “Required as indicated, unless accomplished previously.” Therefore, in the case of paragraphs (f) and (h)(2) of this AD, if the required inspection has been accomplished prior to the effective date of this AD, this AD does not require that it be repeated. However, this AD does require that repetitive inspections be conducted thereafter at intervals not to exceed 2,500 landings (if no cracking is detected, as specified in paragraphs (f) and (i) of the final rule), and that other follow-on actions be accomplished when indicated.

Request to Revise A Certain Compliance Time in Paragraph (f) of the Proposed AD

Several commenters request that the compliance time of “prior to the accumulation of 30,000 or more total landings on the MLG piston” specified in paragraph (f) of the proposed AD be changed to “within 30,000 landings since modification of the MLG.” One of the commenters states that the subject compliance time of paragraph (f) of the proposed AD conflicts with paragraph (a)(3) of the proposed AD, which requires the preventative modification of certain MLG pistons (non-modified) that have accumulated 30,000 or more total landings to be done “within 2 years or 5,000 landings on the MLG piston after the effective date of this AD.” In this scenario, the commenter contends that a non-modified piston has an extended service allowance and modified pistons have been penalized.

Another commenter states that the proposed compliance time conflicts with the requirements of paragraphs (b)(1)(iii) and (e)(2) of the proposed AD. Paragraph (b)(1)(iii) of the proposed AD requires the preventative modification “prior to the accumulation of 30,000 or more total landings on the MLG piston.” Paragraph (e)(2) of the proposed AD requires dye penetrant and magnetic particle inspections for any MLG piston that has accumulated less than 30,000 landings since accomplishment of the modification.

It was the FAA’s intent that the replacement required by paragraph (f) of the proposed AD be accomplished within 30,000 landing since modification of the MLG. Therefore, we agree with the commenters to revise the compliance time of paragraph (f) of the final rule from “prior to the accumulation of 30,000 or more total landings on the MLG piston” to “within 30,000 landings since modification of the MLG” and have revised the final rule accordingly.

Request to Revise Phrase “Since Date of Manufacture”

One commenter requests that the phrase “since date of manufacture” be revised to “since date of installation” in paragraphs (h)(1), (h)(2), and (h)(3) of the proposed AD. The commenter states that industry’s standard for tracking safe-life landing gear components is total landings accumulated from the date of installation, not the date of manufacture.

The FAA does not agree. Because MLG pistons can be taken off airplanes and sold to other operators, there potentially could be multiple installations. Operators may misinterpret “date of installation” to mean that every time a MLG piston is installed, the number of landings returns to zero. Therefore, we find “date of manufacture” (i.e., since new) to be the correct phrase.

Request to Reference Correct Service Bulletin for Optional Terminating Action

Several commenters request that paragraph (l) of the proposed AD be revised to reference McDonnell Douglas Service Bulletin MD80-32-309, which was issued by Boeing on January 31, 2000, instead of McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999. One commenter states that Service Bulletin MD80-32-277 does not reference any configuration beyond part number (P/N) 5935347-511 for replacement of prior configurations. The commenter also states that Service Bulletin MD80-32-309 specifies that MLG piston, P/N 5935347-517, is an approved configuration for closing action, and that it is an FAA-approved alternative method of compliance for both AD’s 96-19-09 and 99-13-07.

The FAA agrees. We have reviewed McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999, and acknowledge that it does not describe procedures for replacement of any MLG piston with a MLG piston, P/N 5935347-517. The correct service information for accomplishing the replacement specified in paragraph (l) of this AD is McDonnell Douglas Service Bulletin MD80-32-309, dated January 31, 2000. We have revised paragraph (l) of the final rule accordingly.

Operators should note that Service Bulletin MD80-32-309 also describes procedures for replacement of the MLG piston due to cracking near the radius of the jackball fitting. However, this proposed AD does not address the actions associated with the jackball fitting. We may consider issuing a separate rulemaking action to supersede AD 99-13-07.

Request to Include Inspection of Jackball Fitting

One commenter requests that the proposed AD require an inspection/rework of the aft torque link lug and inspection of the jackball fitting. The commenter provided no explanation for its request. The FAA does not agree. As discussed above, the FAA may issue a separate rulemaking action to address any identified unsafe condition associated with the jackball fitting.

Question about How to Determine the Inspection Interval and Imposed Life Limit

One commenter asks how to determine the inspection interval and the imposed life limit for MLG pistons that were previously modified per McDonnell Douglas Service Bulletin MD80-32-277, when it cannot determine the times and cycles accumulated at the time of modification.

The FAA finds that, if the cycle count of the MLG piston cannot be determined at the time of modification, operators should work with an appropriate FAA Principal Maintenance Inspector (PMI), the Manager of the Los Angeles Aircraft Certification Office (ACO), and the airplane manufacturer to resolve the issue.

Conclusion

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Cost Impact

There are approximately 1,200 Model DC-9-80 series airplanes and Model MD-88 airplanes of the affected design in the worldwide fleet. The FAA estimates that 700 airplanes of U.S. registry will be affected by this AD.

Should an operator be required to do the dye penetrant and magnetic particle inspections, it will take approximately 2 work hours per MLG piston to accomplish the inspections, at an average labor

rate of \$60 per work hour. Based on these figures, the cost impact of these inspections required by this AD on U.S. operators is estimated to be \$120 per MLG piston.

Should an operator be required to do the preventative modification, it will take approximately 6 work hours per MLG piston to accomplish the inspections, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of these inspections required by this AD on U.S. operators is estimated to be \$360 per MLG piston.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Should an operator elect to accomplish the optional terminating action that is provided by this AD action, it would take approximately 31 work hours per MLG piston to accomplish it, at an average labor rate of \$60 per work hour. The cost of required parts would be approximately \$107,070 per MLG piston. Based on these figures, the cost impact of the optional terminating action would be \$108,930 per MLG piston.

Regulatory Impact

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a “significant regulatory action” under Executive Order 12866; (2) is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption “ADDRESSES.”

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by removing amendment 39-9756 (61 FR 48617, September 16, 1996), and by adding a new airworthiness directive (AD), amendment 39-12225, to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "av-info.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2001-09-18 MCDONNELL DOUGLAS: Amendment 39-12225. Docket 99-NM-164-AD.
Supersedes AD 96-19-09, Amendment 39-9756.

Applicability: Model DC-9-81 (MD-81), DC-9-82 (MD-82), DC-9-83 (MD-83), and DC-9-87 (MD-87) series airplanes; and Model MD-88 airplanes; as listed in McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999; certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (m)(1) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent fatigue cracking of the main landing gear (MLG) pistons, which could result in failure of the pistons and subsequent damage to the airplane structure or injury to airplane occupants, accomplish the following:

For Airplanes on Which Certain Pistons Have Not Been Modified: Inspections

(a) For airplanes on which any MLG piston, part number (P/N) 5935347-1 through 5935347-509 inclusive, has NOT been modified: Do the actions specified in paragraph (a)(1), (a)(2), or (a)(3) of this AD, as applicable, per the Accomplishment Instructions of McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999.

(1) For any MLG piston that has accumulated less than 5,000 total landings since date of manufacture: Prior to the accumulation of 5,000 total landings on the MLG piston, or within 12 months after the effective date of this AD, whichever occurs later, do dye penetrant and magnetic particle inspections to detect cracks of the MLG pistons.

(2) For any MLG piston that has accumulated 5,000 or more total landings since date of manufacture, but less than 30,000 total landings since date of manufacture: Within 1,500 landings on the MLG piston or 12 months after the effective date of this AD, whichever occurs later, do dye penetrant and magnetic particle inspections to detect cracks of the MLG pistons.

(3) For any MLG piston that has accumulated 30,000 or more total landings since date of manufacture: Within 2 years or 5,000 landings on the MLG piston after the effective date of this AD, whichever occurs first, do the preventative modification (including inspections; corrective actions, if necessary; wet grind rework area; flap shot peen rework area; and reidentify the MLG pistons);

except as required by paragraph (k) of this AD. Following accomplishment of the preventative modification, do the actions specified in paragraph (e) at the time indicated in that paragraph.

Note 2: Modification of the MLG piston per the original version, and Revisions 01 through 04 of McDonnell Douglas Service Bulletin MD80-32-277, Service Rework Drawing SR08320081, or any FAA-approved preventative modification to MLG pistons before the effective date of this AD, is considered acceptable for compliance with the preventative modification requirements of paragraphs (a)(3), (b)(1)(iii), (b)(2), and (c)(1) of this AD.

For Airplanes on Which Certain Pistons Have Not Been Modified: Condition 1 (No Crack)

(b) If no crack is found during any inspection required by either paragraph (a)(1) or (a)(2) of this AD, do the actions specified in either paragraph (b)(1) or (b)(2) of this AD.

(1) Condition 1, Option 1. Do the actions specified in either paragraph (b)(1)(i) or (b)(1)(ii) of this AD, and in paragraph (b)(1)(iii) of this AD.

(i) Repeat the inspections required by either paragraph (a)(1) or (a)(2) of this AD thereafter at intervals not to exceed 1,500 landings until the permanent modification required by paragraph (b)(1)(iii) of this AD has been done.

(ii) Before further flight, do the flap shot peening per McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999. Repeat the inspections required by either paragraph (a)(1) or (a)(2) of this AD thereafter at intervals not to exceed 2,500 landings until the permanent modification required by paragraph (b)(1)(iii) of this AD has been done.

(iii) Prior to the accumulation of 30,000 or more total landings on the MLG piston, do the preventative modification (including inspections; corrective actions, if necessary; wet grind rework area; flap shot peen rework area; and reidentify the MLG pistons), per the Accomplishment Instructions of McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999; except as required by paragraph (k) of this AD. Accomplishment of the permanent modification stops the repetitive inspection requirements of paragraphs (b)(1)(i) and (b)(1)(ii) of this AD. Following accomplishment of the preventative modification, do the actions specified in paragraph (e) at the time indicated in that paragraph.

(2) Condition 1, Option 2. Before further flight, do the preventative modification (including inspections; corrective actions, if necessary; wet grind rework area; flap shot peen rework area; and reidentify the MLG pistons) per Condition 1, Option 2, of the Accomplishment Instructions of McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999; except as required by paragraph (k) of this AD. Following accomplishment of the preventative modification, do the actions specified in paragraph (e) at the time indicated in that paragraph.

For Airplanes on Which Certain Pistons Have Not Been Modified: Condition 2 (Any Crack Within Limits)

(c) If any crack is found during any inspection required by either paragraph (a)(1) or (a)(2) of this AD, and that crack is within the limits specified in McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999, before further flight, do the action(s) specified in either paragraph (c)(1) or (c)(2) of this AD.

(1) Do the preventative modification (including inspections; corrective actions, if necessary; wet grind rework area; flap shot peen rework area; and reidentify the MLG pistons) per the Accomplishment Instructions of the service bulletin; except as required by paragraph (k) of this AD. Following accomplishment of the preventative modification, do the actions specified in paragraph (e) or (h) of this AD, as applicable, at the time indicated in that paragraph.

(2) Replace the MLG piston with a new or serviceable MLG piston per the service bulletin. Following accomplishment of the replacement, do the actions specified in paragraph (a), (e), or (h) of this AD, as applicable, at the time indicated in that paragraph.

Note 3: Replacement of the MLG piston with a modified MLG per the original version, and Revisions 01 through 04 of McDonnell Douglas Service Bulletin MD80-32-277, Service Rework Drawing SR08320081, or any FAA-approved preventative modification to MLG pistons before the effective date of this AD, is considered acceptable for compliance with the replacement requirements of paragraphs (c)(2) and (d)(1) of this AD.

For Airplanes on Which Certain Pistons Have Not Been Modified: Condition 3 (Any Crack Outside Limits)

(d) If any crack is found during any inspection required by either paragraph (a)(1) or (a)(2) of this AD that is outside the limits specified in McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999, before further flight, do the action(s) specified in paragraph (d)(1) or (d)(2) of this AD.

(1) Condition 3, Option 1. Replace the MLG piston with a new or serviceable MLG piston per the service bulletin. Following accomplishment of the replacement, do the actions specified in paragraph (a), (e), or (h) of this AD, as applicable, at the time indicated in that paragraph.

(2) Condition 3, Option 2. Repair per a method approved by the Manager, Los Angeles Aircraft Certification Office (ACO), FAA.

For Airplanes on Which Certain Pistons Have Been Modified: Replacement or Inspections and Corrective Actions, If Necessary

(e) For airplanes on which any MLG piston, part number (P/N) 5935347-1 through 5935347-509 inclusive, has been modified and reidentified as P/N SR09320081-3 through SR09320081-13 inclusive:

(1) For any MLG piston that has accumulated 30,000 or more landings since accomplishment of the modification: Within 6 months after the effective date of this AD, replace the MLG piston with a new or serviceable MLG piston per the service bulletin. Following accomplishment of the replacement, do the actions specified in paragraph (a), (e), or (h) of this AD, as applicable, at the time indicated in that paragraph.

(2) For any MLG piston that has accumulated less than 30,000 landings since accomplishment of the modification: Do dye penetrant and magnetic particle inspections to detect cracks of the MLG pistons, per the Accomplishment Instructions of McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999; at the applicable time(s) specified in paragraph (e)(2)(i) or (e)(2)(ii) of this AD.

(i) For any MLG piston that has been modified per paragraph (a)(3), (b)(1)(iii), (b)(2), or (c)(1) of this AD, or that has been replaced with a modified MLG piston per paragraph (c)(2) or (d)(1) of this AD: Inspect within 2,500 landings following accomplishment of the modification or replacement with a modified MLG piston.

(ii) For any MLG piston that has been modified per service information other than Revision 04 of McDonnell Douglas Service Bulletin MD80-32-277 and not inspected per Revision 04 of the service bulletin prior to the effective date of this AD: Inspect within 1,500 landings or 12 months after the effective date of this AD, whichever occurs later.

(f) If no crack is found during any inspection required by paragraph (e)(2) of this AD, repeat the dye penetrant and magnetic particle inspections required by paragraph (e)(2) of this AD thereafter at intervals not to exceed 2,500 landings. Within 30,000 landings since modification of the MLG piston, replace the MLG piston with a new or serviceable MLG piston per the Accomplishment Instructions of McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999. Following accomplishment of the replacement, do the actions specified in paragraph (a), (e), or (h) of this AD, as applicable, at the time indicated in that paragraph.

(g) If any crack is found during any inspection required by paragraph (e)(2) of this AD, before further flight, do the action(s) specified in either paragraph (d)(1) or (d)(2) of this AD.

For Airplanes on Which A Certain Piston Has Been Installed:

(h) For airplanes on which any MLG piston, P/N 5935347-511, has been installed: Do the actions specified in paragraph (h)(1), (h)(2), or (h)(3) of this AD, as applicable, per the Accomplishment Instructions of McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999.

(1) For any MLG piston that has accumulated less than 5,000 total landings since date of manufacture: Prior to the accumulation of 5,000 total landings on the MLG piston, or within 12 months after the effective date of this AD, whichever occurs later, do dye penetrant and magnetic particle inspections to detect cracks of the MLG pistons.

(2) For any MLG piston that has accumulated 5,000 or more total landings since date of manufacture, but less than 30,000 total landings since date of manufacture: Within 1,500 landings on the MLG piston or 12 months after the effective date of this AD, whichever occurs later, do dye penetrant and magnetic particle inspections to detect cracks of the MLG pistons.

(3) For any MLG piston that has accumulated 30,000 or more total landings since date of manufacture: Within 6 months after the effective date of this AD, replace the MLG piston with a new or serviceable MLG piston per the service bulletin. Following accomplishment of the replacement, do the actions specified in paragraph (a), (e), or (h) of this AD, as applicable, at the time indicated in that paragraph.

(i) If no crack is found during any inspection required by either paragraph (h)(1) or (h)(2) of this AD, repeat the dye penetrant and magnetic particle inspections required by either paragraph (h)(1) or (h)(2) of this AD thereafter at intervals not to exceed 2,500 landings. Prior to the accumulation of 30,000 or more total landings on the MLG piston, do the actions specified in paragraph (d)(1) of this AD.

(j) If any crack is found during any inspection required by either paragraph (h)(1) or (h)(2) of this AD, before further flight, do the action(s) specified in either paragraph (d)(1) or (d)(2) of this AD.

Exception to Actions Referenced in Service Bulletin

(k) If any discrepancy is found during any inspection while accomplishing the preventative modification required by this AD, prior to further flight, do applicable corrective action(s) per McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999. If the service bulletin specifies to contact the manufacturer for appropriate action: Prior to further flight, repair in accordance with a method approved by the Manager, Los Angeles ACO. For a repair method to be approved by the Manager, Los Angeles ACO, as required by this paragraph, the Manager's approval letter must specifically reference this AD.

Optional Terminating Action

(l) Replacement of any MLG piston with a new MLG piston, P/N 5935347-517, per McDonnell Douglas Service Bulletin MD80-32-309, dated January 31, 2000, constitutes terminating action for the requirements of this AD for that MLG piston.

Alternative Methods of Compliance

(m) (1) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Los Angeles ACO. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles ACO.

Note 4: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Los Angeles ACO.

(2) Alternative methods of compliance, approved previously in accordance with AD 96-19-09, amendment 39-9756, are approved as alternative methods of compliance with this AD.

Special Flight Permits

(n) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Incorporation by Reference

(o) Except as provided by paragraphs (d)(2), (k), and (l) of this AD, the actions shall be done in accordance with McDonnell Douglas Service Bulletin MD80-32-277, Revision 04, dated December 7, 1999. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Boeing Commercial Aircraft Group, Long Beach Division, 3855 Lakewood Boulevard, Long Beach, California 90846, Attention: Data and Service Management, Dept. C1-L5A (D800-0024). Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Effective Date

(p) This amendment becomes effective on June 14, 2001.

FOR FURTHER INFORMATION CONTACT: Brent Bandley, Aerospace Engineer, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712; telephone (310) 627-5237; fax (310) 627-5210.

Issued in Renton, Washington, on May 3, 2001.

Lirio Liu Nelson, Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.